

REMARKS

Applicant argues over the Examiner's rejections. No amendments to the claims have been made.

103 Rejections

1. The Examiner has rejected claims 12-21 as obvious in light of US 5,690,161 to Daussan, US 5,785,851 to Morris, and US 5,520,823 to Jones. Claim 12 is the only independent claim and teaches a filter comprising a bonded network of graphitized carbon. Claims 13-21 stand or fall with claim 12.

The Examiner cites Daussan as an example of a filter comprising a protruding frame and a plurality of sieve plates defining a reservoir chamber, and Morris as teaching a corrugated surface. The Examiner finally relies on Jones as teaching a bonded network of graphitized carbon and a ceramic raw material. Applicant respectfully disagrees.

Jones does not teach a bonded network of graphitized carbon. Jones teaches "a crystalline phase comprising graphite and wollastonite dispersed in a substantially amorphous matrix of borosilicate glass." Col. 21. 13-15. Graphite is dispersed in the amorphous matrix, but the amorphous matrix does not comprise graphite or even carbon. The graphite of Jones cannot form a carbon-bonded network or a glassy phase. In contrast, claim 1 of the present invention describes "a bonded network of graphitized carbon." Jones does not teach a network of graphitized carbon, and actually teaches away from such a network by distinguishing between the crystalline graphite in the dispersed phase and the amorphous borosilicate glass matrix. The references do not, alone or in combination, teach or suggest a network of graphitized carbon. Claims 12-21 are not obvious in light of the references.

2. The Examiner has rejected claims 22-28 in light of WO 01/40414 to Rogers, Daussen, and Morris. Claims 22 is the only independent claim and claims 23-28 stand or fall with claim 22.

Claim 22 teaches a method for producing a filter including a plurality of sieve plates defining a reservoir chamber. The sieve plates comprise a bonded network of graphitized carbon. The Examiner will appreciate that, absent a pore former or other means to produce a porous material, ceramic materials including the present invention are essentially non-porous in that fluids, such as molten metals, will not pass through them.

Rogers describes a carbon foam having an open-celled structure produced by heating bituminous coal under pressure in non-oxidizing conditions with a blowing agent. The resultant carbon foam is porous. In contrast, the present invention comprises forming a filter assembly from a plurality of sieve plates that are inherently non-porous except for a plurality of holes 3. The holes 3 must be formed in the sieve plates or the assembly cannot act as a filter.

Daussen teaches a filter comprising at least two refractory plates defining at least one cavity. Daussen does not teach a composition for the plates but does show a plurality of holes 3 in the plates 2. Presumably, the holes 3 are necessary because the plates 2 of Daussen like the plate of the present invention are otherwise non-porous. Morris describes a corrugated filter surface.

The Examiner combines Rogers with Daussen to produce a carbon-bonded filter assembly defining a reservoir chamber. Applicant believes this combination is improper. Applicant acknowledges that the Examiner does not have to find the claimed invention explicitly in the prior art references. See e.g., Pfizer, Inc. v. Apotex, Inc., No. 2006-1261

(Fed. Cir. 2007) (finding obviousness because the prior art assumed a finite number of chemical constituents although the prior art lacked an explicit teaching to a particular chemical moiety). Nevertheless, the cited references must at least teach, suggest or motivate their combination to one of ordinary skill in the art. See, e.g., In re Kahn, 441 F.3d 977, 986 (Fed. Cir. 2006) (affirming the need for prior art references to teach, suggest or motivate their combination without the use of hindsight).

Here, no teaching, suggestion or motivation exists because Rogers includes a carbon-bonded material that is inherently porous and Daussen teaches a plurality of holes in a non-porous material. One skilled in the art would either have to (1) form holes in plate comprising an inherently porous material or (2) discover a method of producing a perforated plate comprising a non-porous carbon-bonded network. The first alternative would be nonsensical, useless or, at the very least, redundant. Further, it would not produce the claimed invention. The second alternative would require the Examiner to use impermissible hindsight in that the cited references do not describe a method of producing a non-porous carbon-bonded network. The present invention includes inherently non-porous, carbon-bonded sieve plates into which perforations are formed. Claims 22-28 cannot be obvious in light of Rogers and Daussen and are allowable.

In light of the above, Applicant submits claims 12-28 are allowable. Early and favorable action is earnestly solicited.

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Respectfully submitted,

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